

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
10 February 2005 (10.02.2005)

PCT

(10) International Publication Number
WO 2005/012392 A1

(51) International Patent Classification⁷: **C08G 77/00**,
C08F 291/02, C08L 51/00, 51/02, 2/22

(74) Agent: **CHO, In-Jae**; 3rd Fl., Janghyun Bldg., 637-23,
Yeoksam-dong, Gangnam-gu, Seoul 135-909 (KR).

(21) International Application Number:
PCT/KR2004/001113

(22) International Filing Date: 13 May 2004 (13.05.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10-2003-0053585 2 August 2003 (02.08.2003) KR

(71) Applicant (for all designated States except US): **LG CHEM. LTD.** [KR/KR]; LG Twin Tower, East Tower 20, Yeouido-dong, Yeongdeungpo-gu, Seoul 150-721 (KR).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **LEE, Kwang-jin** [KR/KR]; Dongjin Juteak 102, Yongho 3-dong, Nam-gu, Busan 608-093 (KR). **AHN, Jeong-heon** [KR/KR]; Hyangnim Hyundai Apt. 103-1001, Seokhyeon-dong, Suncheon 540-758 (KR). **LEE, Hye-kyong** [KR/KR]; Jinsung Apt. 301, Bongdong-eup 834-1, Wanju-gun, Jeollabuk-do 565-900 (KR).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **ACRYL-SILICONE HYBRID IMPACT MODIFIERS AND METHOD FOR PREPARING THE SAME AND VINYL CHLORIDE RESIN COMPOSITIONS HAVING THE SAME**

(57) Abstract: The present invention relates to acryl-silicone hybrid impact modifiers, the method of their manufacture, and vinyl chloride resin compositions containing the above. The acryl-silicone hybrid impact modifier of the present invention is comprised of a) 0.01 to 10 parts by weight of a seed obtained through emulsion copolymerization of vinyl monomers and hydrophilic monomers; b) 60 to 94 parts by weight of an acryl-silicone hybrid rubber core covering the seed in which a polyorganosiloxane rubber phase is dispersed locally onto the inner part and surface of the acrylic rubber core containing alkyl acrylate polymers of which alkyl group has 1 to 8 carbon atoms; and c) 6 to 40 parts by weight of a shell covering the above rubber core and containing alkyl methacrylate polymers of which alkyl group has 1 to 4 carbon atoms. Thermoplastic resins containing the above, particularly by being added to vinyl chloride resins, they have effects of granting superior impact resistance, weatherability, and high gloss.



WO 2005/012392 A1